

CLAIMS:

1. A container having an opening in which are located first and second strips of fastener material which are engageable and disengageable with each other respectively to close and to open the opening, the opening having therein a flexible spout which can be moved into an inoperative position in the interior of the container when not in use and can be moved out into an operative position in which it allows material within the container to be dispensed therefrom, wherein each fastener strip has a respective longitudinal flange and the strips are able to be engaged to close the opening when the spout is in its inoperative position, at least portions of the respective longitudinal flanges of the fastener strips being secured to each other to form the spout.

2. A container according to claim 1, in which the fastener strips have further respective longitudinal flanges which secure the fastener strips to the container adjacent to the opening.

3. A container according to claim 1 or 2, in which the fastener strips have respective longitudinal grasping flanges which protrude outwardly of the opening and can be grasped manually to disengage the fastener strips and open the opening.

4. A container according to any preceding claim, in which the fastener strips have a slider mounted thereon, the slider being movable along the strips to engage and disengage them.

5. A container according to any preceding claim, in which each end of each fastener strip is secured to the adjacent end of the other strip.

6. A container according to any preceding claim, which is formed from flexible sheet material.

7. A container according to claim 6, in which the sheet material is plastics.

8. A container according to claim 6 or 7, in which the container comprises first and second panels of sheet material forming respectively front and rear major faces of the container.

9. A container according to claim 8, in which the first and second panels are formed by folding a single sheet of material.

10. A container according to claim 8 or 9, having respective gussets between opposed edges of the front and rear faces.

11. A container according to claim 10, in which the opening is in one of the gussets.

12. A container according to any of claims 7 to 10, in which the opening is in one of the major faces of the container.

13. A container according to claim 12, in which the faces are quadrilateral and the opening extends parallel to a first pair of opposite edges of the quadrilateral.

14. A container according to claim 13, in which the opening is substantially mid-way between the pair of edges.

15. A container according to claim 14, in which the quadrilateral is a rectangle, the major sides of which

constitute the pair of edges.

16. A container according to claim 15, in which the mid-point of the opening is located approximately two-thirds of
5 the distance between the minor sides of the rectangle.

17. A container according to any of claims 6 to 16, having a further opening through which material can be introduced into the container.

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18. A container according to claim 17, in which the further opening can be closed by heat-sealing of the sheet material adjacent the further opening.

15 19. A container according to any of claims 13 to 16, in which the container is closed along a first one of the second pair of opposite edges and is open along the second one of the second pair.

20 20. A container according to claim 19, in which the container is closed along the said first pair of edges by heat sealing and can be closed by heat sealing along the said second pair of edges.

25 21. A reclosable fastener comprising first and second strips of fastener material which are engageable with and disengageable from each other, each strip comprising an elongate body portion which is shaped for releasable engagement with the body portion of the other strip and first
30 and second longitudinal flanges, the first flanges extending away from a plane of separation of the strips and the second flanges extending in the same direction substantially parallel to the plane of separation.

35 22. A reclosable fastener according to claim 21, in

which the first flanges are narrower than the second flanges.

23. A reclosable fastener according to claim 22, in which the first flanges are at least one-half the width of the second flanges.

24. A reclosable fastener according to claim 21, in which each first flange is from 2 mm to 10 mm in width.

10 25. A reclosable fastener according to claim 21 or 24, in which each second flange is from 20 mm to 100 mm in width.

26. A reclosable fastener according to claim 25, in which each second flange is from 20 mm to 70 mm in width.

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27. A reclosable fastener according to any of claims 21 to 26, fitted with at least one slider movable along the fastener to engage and disengage the fastener strips.

20 28. A reclosable fastener according to any of claims 21 to 26, in which each fastener strip has a third longitudinal flange which extends in a plane substantially parallel to the plane of separation in a direction opposite to that in which the respective second flange extends.

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29. A reclosable fastener according to claim 28, in which each third flange is from 10 mm to 50 mm in width.

30 30. A reclosable fastener according to claim 29, in which each third flange is from 10 mm to 30 mm in width.

31. A reclosable fastener according to any of claims 28 to 30, in which the second and third flanges of each strip are substantially coplanar with each other.

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32. A reclosable fastener according to any of claims 21 to 31, in which the first flanges extend in planes substantially perpendicular to the plane of separation.

5 33. A reclosable fastener comprising first and second strips of fastener material which are engageable with and disengageable from each other, each strip comprising an elongate body portion which is shaped for releasable engagement with the body portion of the other strip, each
10 strip having at least first, second and third longitudinal flanges.

34. A reclosable fastener according to claim 33, in which each first flange is from 2 mm to 10 mm in width.
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35. A reclosable fastener according to claim 33 or 34, in which each second flange is from 20 mm to 100 mm in width.

36. A reclosable fastener according to claim 35, in
20 which each second flange is from 20 mm to 70 mm in width.

37. A reclosable fastener according to any of claims 33 to 36, in which each third flange is from 10 mm to 50 mm in width.
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38. A reclosable fastener according to claim 37, in which each third flange is from 10 mm to 30 mm in width.

39. A length of reclosable fastener according to any of
30 claims 21 to 38, in which the second flanges of the strips are joined to each other and cut to form a spout portion.

40. A length of reclosable fastener according to claim 39, having a single spout portion.
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41. A length of reclosable fastener according to claim 39, having a plurality of spout portions at spaced intervals along its length.

5 42. A length of reclosable fastener according to any of claims 39 to 41, in which the second flanges are joined along a line which extends from a first point adjacent one end of the body portions to a second point on the lateral edges of the second flanges lying closer to the opposite end of the
10 body portions than the first end and are cut along respective lines extending from the second point back to the body portions.

43. A length of reclosable fastener according to
15 claim 42, in which the lines along which the second flanges are cut extends substantially perpendicularly to the body portions.

44. A length of reclosable fastener according to
20 claim 42 or 43, in which the line along which the second flanges are joined is curved in the direction away from the body portions.

45. A length of reclosable fastener according to any of
25 claims 42 to 44, in which the portions of the second flanges lying to the side of the line along which they are joined distant from the body portions are removed.

46. A length of reclosable fastener according to any of
30 claims 39 to 45, in which the portions of the second flanges lying to the side of the lines along which the flanges are cut opposite to the spout portion are removed.

47. A web of sheet material having a plurality of spaced
35 openings therein, each opening having a length of fastener

according to any of claims 21 to 46 located and secured to the sheet material by its first flanges to respective sides of the opening.

5 48. A web according to claim 47, in which the openings are spaced along and aligned with a line extending longitudinally of the web.

10 49. A web according to claim 48, which is in the form of a continuous rectangular strip and the line extends parallel to first and second opposite side edges of the strip.

50. A web according to claim 49, in which the line is substantially mid-way between the side edges.

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51. A web according to any of claims 48 to 50, which is rolled longitudinally.

20 52. A method of making a container formed from flexible sheet material, the method comprising:

providing a piece of flexible sheet material having an elongate opening therein;

presenting to the opening a length of reclosable fastener according to any of claims 21 to 46;

25 securing the first flanges of the fastener strips to the sheet material at respective opposite sides of the opening; and

30 joining and cutting the second flanges of the fastener strips to form a flexible spout located in the elongate opening in which the fastener length is located and its strips are engageable and disengageable with each other respectively to open and close the opening.

53. A method according to claim 52, in which the joining and cutting operations are carried out prior to the

presentation of the fastener to the opening.

54. A method according to claim 52 or 53, in which the second flanges are joined along a line which extends from a first point adjacent one end of the body portions to a second point on the lateral edges of the second flanges lying closer to the opposite end of the body positions than the first end and are cut along respective lines extending from the second point back to the body portions.

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55. A method according to claim 54, in which the lines along which the second flanges are cut extends substantially perpendicularly to the body portions.

15 56. A method according to claim 54 or 55, in which the portions of the second flanges lying to the side of the line along which they are joined distant from the body portions are removed.

20 57. A method according to any of claims 52 to 56, in which the portions of the second flanges lying to the side of the lines along which the flanges are cut opposite to the spout portion are removed.

25 58. A method according to any of claims 52 to 57, in which the piece of flexible sheet material has a plurality of elongate openings therein and the operations of claim 52 are carried out on each opening.

30 59. A method according to claim 58, in which the piece of material is a continuous web and the openings are spaced along and aligned with a line extending longitudinally of the web.

35 60. A method according to claim 59, in which the web is

in the form of a continuous rectangular strip and the line extends parallel to first and second opposite side edges of the strip.

5 61. A method according to claim 60, in which the line is substantially mid-way between the side edges.

62. A method according to any of claims 59 to 61, including the further step of rolling the strip.

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63. A method according to any of claims 59 to 62, including the further step of forming the web into a continuous string of bags, each of which has a reclosable opening formed with a spout, and separating the string into
15 individual bags.

64. A method according to claim 63, in which each bag has a further opening through which the bag can be filled.

20 65. A method according to any of claims 59 to 62, including the further step of feeding the web to a form-fill-seal machine, at which individual sealed bags containing material introduced by the machine are formed, each bag having a reclosable opening formed with a spout.

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66. A method according to any of claims 52 to 65, in which the joining and cutting operations are carried out whilst the fastener length is received in a groove of a rotary turret which is used to present the fastener length to the
30 flexible material.

67. A method according to any of claims 52 to 65, in which the length of reclosable fastener is in accordance with any of claims 28 to 31 and 33 to 38, in which the third
35 flanges are passed through the opening to form flaps for

opening of the reclosable fastener.

68. An apparatus for carrying out a method according to any of claims 52 to 67, comprising a means for receiving a length of zipper, means for advancing a piece of flexible sheet material through a station at which the zipper-receiving means is located, means for feeding lengths of zipper according to any of claims 21 to 46 to the zipper-receiving means, cutting and joining means for carrying out the cutting and joining operations of claim 52 on the zipper, and means for securing at least one of the first flanges of the zipper length to the sheet material adjacent the opening therein.

69. An apparatus according to claim 68, in which the cutting and joining means are located for carrying out at least one of the cutting operation and the joining operation on the zipper length when received in the zipper-receiving means.

70. An apparatus according to claim 69, in which the cutting and joining means are located to carry out both the said operations on the zipper length when received in the zipper-receiving means.

71. An apparatus according to any of claims 68 to 70, including means for cutting a continuous length of zipper into pre-cut lengths prior to its presentation to the zipper-receiving means.

72. An apparatus according to any of claims 68 to 71, in which the zipper-receiving means comprises a rotary turret having a plurality of parallel zipper-receiving grooves and rotatable about an axis parallel to the grooves.

73. An apparatus according to any of claims 68 to 72,

including a further means for securing the other first flange of the zipper length to the sheet material at the opposite side of the opening.

5 74. An apparatus according to claim 73, in which the further securing means is located at a separate, downstream operating station of the apparatus.

75. An apparatus according to any of claims 68 to 74,
10 including a means for forming the opening in the film.

76. An apparatus according to claim 75, in which the means for forming the opening is located at a further, upstream station.

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77. An apparatus according to any of claims 68 to 76, including a means for rolling the film to which the fasteners have been applied.

20 78. An apparatus according to any of claims 68 to 76, including a means for forming fillable bags from the film material.

79. An apparatus according to any of claims 68 to 76,
25 including a form-fill-seal means for forming the film material into bags and filling the bags.

80. A container substantially as hereinbefore described with reference to figures 1 to 3 of the drawings.

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81. A reclosable fastener substantially as hereinbefore described with reference to figures 4 to 6 of the drawings.

82. A method of making reclosable bags, the method being
35 substantially as hereinbefore described with reference to

figures 7 to 13 of the drawings.

83. An apparatus for making reclosable bags the apparatus being substantially as hereinbefore described with
5 reference to figures 8 to 17 of the drawings.